



An international multidisciplinary workshop

Regulatory and Institutional Frameworks for Markets for Ecosystem Services

Organised by Environmental Regulatory Research Group,
School of Law & Centre for Environmental Strategy,
University of Surrey in collaboration with
The Environmental Law Program,
The George Washington University Law School

6 – 7 June 2012

University of Surrey, UK

Programme and Abstracts



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Introduction

There is increasing acceptance that using markets to protect and restore ecosystems and their capacity to provide services could preserve and maintain biodiversity as well as reduce the impact of human-induced climate change. Whilst the assessment and valuation of these services has received extensive analysis and advanced assessment tools have been developed by conservation biologists and economists different skills must be brought to bear to translate these assessments into institutional and regulatory systems that can protect and enhance ecosystem services. Consequently, mature methods for analysing and establishing robust institutional and regulatory frameworks that can lead to secure market-based conservation practices are still in their early stages of development. It is clear that regulatory and institutional innovation capable of making ecosystem protection profitable for private decision makers and revenue generative for the guardian communities could help realise the economic value of those systems and their services; and secure the imperative to protect and restore. However, such innovation is not without risk. The workshop goal is to enable outcome-oriented interaction between experts, innovators, and front-end users of these evolving market models to learn about recent progress, what strategies can be adopted to encourage cross-learning between different models for regulatory and institutional frameworks, and how to design new institutional and regulatory mechanisms that can help preserve ecosystem services whilst maintaining equity and fairness in access and use.



Workshop Programme

Wednesday, 6 June

Treetops Workshop Room, Wates House, University of Surrey

09.00 – 10.00 **Coffee and registration**

10.00 – 10.30 **Welcome:**

Professor Rosalind Malcolm, University of Surrey, UK

Professor Robert Glicksman, The George Washington University Law School, USA

10.30 – 12.15 **Keynotes: The possibilities of markets for ecosystems services Some legal and regulatory issues**

‘Between Priceless and Worthless: challenges in using market mechanisms for conserving biodiversity’

Professor Colin Reid, School of Law, University of Dundee, UK

‘What really matters in market design for biodiversity offset markets’

Dr Stuart Whitten CSIRO Ecosystem Sciences, Australia

12.15 – 13.15 **Lunch**

13.15 – 14.30 **Session 1: An overview of fundamental issues on the law and policy of markets for ecosystems**

‘Market-based instruments for ecosystem services: a lexicon’,

Dr Romain Pirard, Biodiversité, Institut du Développement Durable et des Relations Internationales, France

‘The use of deliberative processes in valuing the environment’

Professor Robert Lee, Co-Director, ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS), Cardiff University, UK

14.30 – 14.45 **Tea break**

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14.45 – 16.15 **Session 2: Regulating markets for ecosystems services: Institutional challenges and opportunities**

'World Resources Institute's work on payment for environmental services and market-based approaches.

Mr Todd Gartner, Senior Associate, Conservation Incentives & Markets People and Ecosystems Program, World Resources Institute, USA

'Challenges in implementing an ecosystem services payment system'

Professor LeRoy 'Lee' Paddock, Environmental Law Programme, The George Washington University Law School, USA

'Impact of ecosystems services markets on customary land rights',

Professor Alison Clarke, School of Law, University of Surrey, UK

16.45 -22.00 **Workshop drinks and dinner in Shere village, Surrey (The White Horse pub and Kinghams Restaurant, transport organised)**

Thursday, 7 June

08.30 – 09.00 **Coffee**

09.00 – 10.45 **Keynotes: The impossibilities of markets for ecosystems service: Flagging the pitfalls**

'Where are all the markets? The dangers of overselling ecosystem services',

Professor James Salzman, Duke University Law School, USA

"Mission Impossible; Measuring ecosystem goods, ecosystem services and sustainable livelihoods',

Professor Stephen Morse, Chair in Systems Analysis for Sustainability, Centre for Environmental Sustainability, University of Surrey, UK

10.45 – 11.00 **Tea break**

Workshop Programme

- 11.00 – 12.45 **Session 3A: Regulatory choice in the development of markets for ecosystems services**
- ‘Why some institutional arrangements succeed? The voluntary protection of forest biodiversity in southwest Finland and Golden Eagle in Finnish Lapland’
Dr Suvi Borgström, Department of Law, University of Eastern Finland
- ‘No choice? Contesting the narrative of regulatory choice in the international biodiversity regime’,
Ms Jerneja Penca, PhD candidate, Department of Law, European University Institute, Italy
- ‘Valuing water’,
Professor Rosalind Malcolm, School of Law, University of Surrey, UK
- 11.00 – 12.45 **Session 3B: Internationalising the local? Comparative and local approaches to the regulation of ecosystems services**
- ‘A Comparative Analysis of US and EU Regulatory Safeguards for Ecosystems Services Markets’
Professor Robert Glicksman, Environmental Law Programme, The George Washington University Law School, USA and Dr Thoko Kaime, School of Law, University of Surrey, UK.
- ‘Ecosystem services: Between the economic efficiency of markets and sustainability’
Professor Ana Maria de Oliveira Nusdeo, Faculty of Law, University of Sao Paulo, Brasil
- ‘Valuation methods for riparian ecosystem services: Policy implications of a case study of a tributary of the River Thames’
Dr Jonathan Chenoweth, Centre for Environmental Strategy, University of Surrey
- 12.45 – 13.45 **Lunch**

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13.45 -15.15 **Session 4A: Learning from the nations: Selected case-studies on payments for ecosystems services**

'Payments for Ecosystem Services and Intermediaries: Investigating Potential Involvement and Programmatic Roles in Western Panama',
Ms Heidi R. Huber-Stearns, Graduate Student, Department of Human Dimensions of Natural Resources, Colorado State University; and Joshua H. Goldstein, Assistant Professor, Department of Human Dimensions of Natural Resources, Colorado State University, USA

'Market for improved water provision in developing countries: An application of choice experiment method',
Mr Sisira Rajapakshe, PhD candidate, School of Earth and Environment, University of Leeds, UK

'Public/private sector initiatives in ecosystems management: Introducing the inFORM Consortium',
Professor Jim Lynch, Distinguished Professor of Life Sciences, University of Surrey; and Director of Forestry, DMCii, UK

13.45 -15.15 **Session 4B: Community and participation as values in the imagining of markets for ecosystems services**

'The legal status of ecosystem services: Can they be considered as public goods?',
Ms Kathleen Mertens, Faculty of Law, Hasselt University, Belgium

'Participating to scale: Legal definitions of ecosystem services, participation and institutional design at the global, regional and local level',
Ms Feja Lesniewska, ClientEarth, UK

'Pro-poor markets for ecosystem services',
Ms Chizoba Chinweze, Chemtek Associates, Nigeria

15.15 – 15.30 **Tea break**

15.30 – 17.00 **Panel Session: Key themes and challenges in the law and policy for markets for ecosystems services: A discussion of opportunities for research and teaching**

Closing and reception

Dr Suvi Borgström, Department of Law, University of Eastern Finland

‘Why some institutional arrangements succeed? The voluntary protection of forest biodiversity in southwest Finland and Golden Eagle in Finnish Lapland’

Despite global, regional and national policy efforts, biodiversity is on the decline. The monetary valuation of ecosystem functions and services and the economic schemes for the maintenance of significant benefit streams are seen as the key to motivate publics and policies for biodiversity. Our purpose in this paper is to explore the critically important institutional features of successful economic instruments.

In this paper, we analyse two cases. The first case study is Natural values’ trading (NVT) scheme in Southwest Finland, and second is the protection of the golden eagle (*Aquila chrysaetos*) in Finnish Lapland. The NVT builds upon the voluntary action of landowners, the payments for ecosystem services, and the fixed-term period of protection (10 years). It was found cost-effective and it gained acceptance amongst the landowners. As golden eagles prey on reindeer calves the recovery of the species led to a conflict between species conservation and reindeer husbandry. In 1998 a new scheme that based on tolerance payments was created. The reindeer herders get compensation if and only if there is proof of a successful nesting of the golden eagle on their reindeer herding lands. The incentive scheme has been effective as after it’s established the number of golden eagles has steadily increased.

We intertwined legal studies and institutional economics and triangulated following reasons for the success. a) a shared framing of problem and consequently a demand of a particular kind of institutional solutions, b) institutional entrepreneurship, i.e. an active agent – individual or a group – who initiated the key principles of the scheme, c) stakeholder collaboration for designing the rules of the scheme and marketing the idea, principles and practices to the local agents d) the schemes fitted the productive practices and customs of local livelihoods, f) feedback mechanisms for adjusting the scheme, and g) willing regulators to engage in these experiments. These institutional features were present in both our cases. They developed agents’ confidence to the schema, trust amongst the agents and, consequently, encouraged the agents to adjust their behaviour.

Suvi Borgström works as a post-doctoral researcher at the University of Eastern Finland, Department of Law (visiting scholar at the Vermont Law School, Fall Semester of Academic year 2012-13). Her recent research has focused on legitimacy issues in Finnish wolf conservation, biodiversity adaptation to climate change, and green infrastructure.

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Dr Jonathan Chenoweth, Centre for Environmental Strategy, University of Surrey

‘Valuation methods for riparian ecosystem services: Policy implications of a case study of a tributary of the River Thames’

A better understanding of value of the different services provided by riparian ecosystems is required by policy makers since water provision is but one of a number of riparian ecosystem services. This is particularly the case in England and Wales where the water abstraction licencing system is being reformed, in part due to the recognition that water bodies provide more than just freshwater. This paper identifies the major ecosystem services provided by riparian environments in the UK and then examines how the value of some of these ecosystem services can be quantified to better inform policy makers. The River Wey is used as a case study for the analysis. While estimates were only able to be generated for some of the ecosystem services provided by the riparian environment of the River Wey catchment, the value of non-water supply services exceeded that of water supply, showing the importance of considering a wider range of ecosystem services when managing riparian environments.

Jonathan Chenoweth joined the Centre for Environmental Strategy, University of Surrey, as a lecturer in September 2002 as a natural resources management specialist. His research focuses upon the institutional and policy dimensions of water management. He researches on water policy and sustainable development in developed and developing regions, including in the UK and elsewhere in Europe, the Middle East and Africa

Chizoba Chinweze, Chemtek Associates, Nigeria

‘Pro-poor markets for ecosystem services’

Ecosystems are the bedrock of life sustainability on earth and natural capital, a prerequisite for human development. The valuation of ecosystem has necessitated the promotion of investment in natural capital. The aim of creating most markets for ecosystem services is to generate fund to conserve and improve ecosystem health; without due consideration to local knowledge, indigenous people, poverty alleviation and sustainable development. Although there are evidences of ecosystem degradation over the last 4 decades and further stresses from unsustainable exploitation, climate change, population growth and unplanned development; custodians of ecosystem services can play critical roles in its restoration. MA analysis indicates that market-based incentives for ecosystem services can positively affect poverty reduction and improve livelihoods.

It is worthy to note that the effective implementation of markets for ecosystem services even as a tool for MEAs can be maximally achieved through the involvement of host communities rendering the service with an ultimate promise of improving their livelihoods.

There is need for political commitments at the highest levels, nationally and internationally and clear

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linkages through laws, policies and institutional frameworks between the government and local communities offering or rendering the ecosystem services, as ecosystem management is a local task. There must be a concert coherent flow of top-bottom and bottom-up approaches; as well as access to technological & financial advancement, capacity-building, planning and appropriate practices. This paper seek to contribute to the knowledge on the key role markets for ecosystem services can play for the pro-poor in enhancing their livelihoods especially in the developing countries that are dependent on ecosystem goods and services for their sustainability – with practical experiences from sub-Saharan Africa and in conserving and restoring ecosystems. The paper also focuses on what to do to maximize the MES outcomes.

Chizoba Chinweze is a chartered environmental scientist. She is involved in research activities on environmental change and human vulnerability with a focus on developing sustainable environmental strategies and climate based policies. Ms Chinweze provides consulting services to the private- and public-sector as a consultant with Chemtek Associates. She is a fellow of LEAD International (Leadership for Environment and Development). LEAD is an international non-profit organization whose mission is to inspire leadership for a sustainable world. She has attended and made presentations at various workshops and conferences both locally and internationally.

Professor Alison Clarke, School of Law, University of Surrey

‘Impact of ecosystems services markets on customary land rights’

Plans involving payments for ecosystems services tend to rely on private landowners’ participation. This raises difficult issues where property rights do not follow a simple private ownership model within the civil law or common law tradition. Particular problems arise where the land and resources concerned are held under customary tenure, typically involving complex, fluid and heterogeneous mixes of private and communal property rights. This paper considers two aspects of the problem. First, a payment scheme may of itself operate to privatise the resources it covers, to the detriment of communal resource right holders and women and vulnerable groups within local communities. Secondly, the difficulty that outsiders have in identifying customary resource rights makes it unlikely that holders of these rights will participate effectively in ecosystem services market projects, and even more unlikely that they will receive an equitable share of any benefits. Under such conditions, it is doubtful whether ecosystems services markets can work.

Alison Clarke is Professor in Law in the School of Law at the University of Surrey and a member of ERRG. She specialises in property law and has a particular interest in communal property in land, water and other natural resources. Her current research is in the area of land rights in developing countries, particularly in southern Africa, and in China.

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Todd Gartner, Senior Associate, Conservation Incentives & Markets People and Ecosystems Program, World Resources Institute, USA

‘World Resources Institute’s work on payment for environmental services and market-based approaches’

Market-based mechanisms to finance the enhancement of ecosystem services, such as clean water, wildlife habitat, and carbon sequestration are emerging as a real opportunity for forest and agricultural owners and managers. If developed correctly, these “tools” compliment traditional forest and agricultural products and provide a mechanism to increase the value placed on natural systems to stem their loss. Mr. Gartner will describe how the payment for environmental services (PES) field has evolved, especially in the United States, over the last few years, what is new and exciting, and what it takes to be successful. He will highlight several real-world case-studies, driven by both regulations and voluntary drivers, that WRI has partnered on including a payment for source water protection program in the forests of New England benefiting the city of Portland, Maine, habitat offset initiatives around military installations focused on imperiled species in the longleaf pine forests of the US southeast, water temperature mitigation trades by water utilities for salmon habitat in Oregon, and a combined forest certification – carbon storage effort with a fortune 500 office supplies company in Appalachia.

Todd Gartner is a Senior Associate for the World Resources Institute’s People and Ecosystems Program. He focuses on developing new ways to finance conservation through the use of conservation incentives and market-based strategies, such as biodiversity offsets, payments for watershed services, and carbon markets. Todd works with a broad range of stakeholders including landowners, regulators, fortune 500 companies, and local partners to achieve conservation objectives both domestically and abroad. Gartner earned his Master of Forestry degree from the Yale School of Forestry and Environmental Studies and a B.S. in finance from University of Maryland’s Smith School of Business. Gartner’s previous work included developing and running the Conservation Incentives program at the American Forest Foundation, field forestry work in New England, fire ecology and eco-tourism research in Botswana and India, business consulting for the USDA Forest Service and several years as a corporate financial consultant. He is also a Doris Duke Conservation Fellow, Switzer Environmental Fellow, Environmental Leadership Program Fellow, and Property and Environmental Research Center Fellow.

Heidi R. Huber-Stearns, Graduate Student, Department of Human Dimensions of Natural Resources, Colorado State University, USA

‘Payments for Ecosystem Services and Intermediaries: Investigating Potential Involvement and Programmatic Roles in Western Panama’

As payments for ecosystem services (PES) programs continue to expand globally, a window of opportunity exists to use lessons learned from existing PES programs to inform the development of new programs to

streamline and improve design and implementation. Examining the roles of program actors is a critical step in this process. Intermediaries often play important roles in PES programs, facilitating transactions between beneficiaries and providers. Intermediaries originate from public, civil, private, or academic sectors, and operate at local to national and international scales. Our research explored potential roles of intermediaries in PES schemes through an investigation in Panama where stakeholders are exploring regional PES program development. We based our analysis upon information gathered from a review of relevant intermediaries literature, which identified four major intermediary roles: information exchange, administration and program implementation, networking, representation and mediation, and program design. We conducted interviews with intermediary organizations in our study region to gain an understanding of their organization's current intermediary roles and potential roles in a future PES program, their organizational capacity strengths and limitations, and how their organizations are connected to each other through collaborations. Our results demonstrate that intermediary organizations are currently performing our categorized roles, and they identified potential organizational roles for a PES program, primarily information exchange, and administration. Interviewees also identified challenges that could limit the activity and effectiveness of intermediaries, mainly challenges specific to an individual organization, across the entire region, and pertaining to an entire sector. Finally, we found that organizational connections vary significantly, with civil and public sectors, and local and regional scales exhibiting the strongest connections across the organization network, highlighting the value of connecting PES actors across sectors and scales. Overall, our results support previous findings that careful consideration of actors is critical to the appropriate design and implementation of PES programs.

Heidi Huber-Stearns is a PhD Candidate in the Forest and Rangeland Stewardship Department at Colorado State University. She is a research assistant for an Agricultural Experiment Station project assessing institutional components of watershed services projects, and a natural resource policy teaching assistant. Heidi received an M.S. in Human Dimensions of Natural Resources from Colorado State University in 2012 and a B.S. in Environmental Studies Social Science and Policy from Southern Oregon University in 2007. She managed the 2011 Colorado Conference on Earth System Governance, and has worked in the western United States and Latin America on natural resource management and social science issues. Her current research interest is evaluating the effects and potential applicability of institutional arrangements in the protection and enhancement of watershed-related ecosystem services in the western United States.

Professor Robert Glicksman, Environmental Law Programme, The George Washington University Law School, USA

'A Comparative Analysis of US and EU Regulatory Safeguards for Ecosystems Services Markets'

The creation of markets in ecosystem services has the potential to provide financial incentives to protect

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the environment either in lieu of or in addition to more traditional regulatory programs. If these markets work properly, they can provide enhanced levels of or more efficient mechanisms for protecting natural resources that provide vital services to humans. The theoretical benefits of ecosystem services markets may be undercut, however, if care is not taken in creating the legal infrastructure that supports trading to ensure that trades provide the promised environmental benefits. This presentation identifies the elements of an ecosystem service market regime that provide accountability, including transparency, reporting, monitoring, public participation, and rule of law safeguards. The presentation will assess whether U.S. and E.U. laws are well designed to provide such an accountable system.

*Robert Glicksman is a nationally and internationally recognized expert on environmental, natural resources, and administrative law issues. A graduate of the Cornell Law School, his areas of expertise include environmental, natural resources, administrative, and property law. Before joining the Law School faculty in 2009, Professor Glicksman taught at the University of Kansas School of Law, where he joined the faculty in 1982 and was named the holder of the Robert W. Wagstaff Distinguished Professor of Law in 1995. Professor Glicksman has practiced with law firms in DC and New Jersey before joining and while on leave from academia, focusing on environmental, energy, and administrative law issues. He has consulted on various environmental and natural resources law issues, including work for the Secretariat of the Commission for Environmental Cooperation in Montreal, Canada. Professor Glicksman has extensive publications in his areas of expertise. He is co-author of two law school casebooks, *Environmental Protection: Law and Policy* (6th ed. Aspen Publishers) and *Administrative Law: Agency Action in Legal Context* (Foundation Press); the four-volume treatise, *Public Natural Resources Law* (2d ed. Thomson/West); two monographs, *Risk Regulation at Risk: A Pragmatic Approach*, and *Pollution Limits and Polluters' Efforts to Comply: The Role of Government Monitoring and Enforcement*, both published by Stanford University Press; and *Modern Public Land Law in a Nutshell* (3d ed. West). He has written numerous book chapters and articles on a variety of environmental and natural resources law topics, concentrating recently on topics such as climate change, federalism issues in environmental law, the challenges facing the federal land management agencies, and environmental enforcement. His articles have been published in law reviews and journals that include the *Texas Law Review*, *Pennsylvania Law Review*, the *Northwestern University Law Review*, the *Duke Law Journal*, the *Vanderbilt Law Review*, the *Wake Forest Law Review*, the *Indiana Law Journal*, the *Stanford Environmental Law Journal*, the *Virginia Environmental Law Journal*, and the *Administrative Law Review*. Professor Glicksman has been a member scholar for the Center for Progressive Reform since 2002 and a member of the Center's Board of Directors since 2008.*

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Dr Thoko Kaime, School of Law, University of Surrey

‘A comparative analysis of US and EU regulatory safeguards for ecosystems services markets’

The creation of markets in ecosystem services has the potential to provide financial incentives to protect the environment either in lieu of or in addition to more traditional regulatory programs. If these markets work properly, they can provide enhanced levels of or more efficient mechanisms for protecting natural resources that provide vital services to humans. The theoretical benefits of ecosystem services markets may be undercut, however, if care is not taken in creating the legal infrastructure that supports trading to ensure that trades provide the promised environmental benefits. This presentation identifies the elements of an ecosystem service market regime that provide accountability, including transparency, reporting, monitoring, public participation, and rule of law safeguards. The presentation will assess whether U.S. and E.U. laws are well designed to provide such an accountable system.

*Thoko Kaime is lecturer in law in the School of Law and Deputy Director of the Environmental Regulatory Research Group. Before joining the School, Thoko Kaime served as Senior Teaching Fellow at the School of Oriental and African Studies (SOAS), University of London and as a corporate consultant for business advisory firm Exclusive Analysis Limited where he was Head of Africa Division. Thoko has previously studied law at the Universities of Malawi, Pretoria and Western Cape and was awarded his PhD at SOAS. He has been associated as a researcher with leading research and strategic institutions in various countries including the Centre for Human Rights (Pretoria), Children's Institute (Cape Town), and the International Environmental Law Research Centre (Geneva). Thoko maintains broad interests in the area of public international law and the social critique of law and legal policy. He has written on human rights and environmental law, focusing on the intersection between law and legitimacy. He is the author of *The Convention on the Rights of the Child: A cultural legitimacy critique*, Europa Law Publishing (2011) and editor of a forthcoming volume *Cultural Legitimacy and the International Law and Policy on Climate Change* Cambridge Press (Summer 2012). Thoko's current research projects include socio-legal and human rights critiques of various aspects of the law and policy of ecosystems services and in particular, market-based initiatives designed to promote environmental protection.*

Professor Robert Lee, Co-Director, ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS), Cardiff University, UK

‘The use of deliberative processes in valuing the environment’

This paper considers values to be derived from eco-systems and asks how these might be measured. In particular it considers whether some form of deliberative engagement might be necessary to elicit values and, if so, how this might be put into operation.

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Robert Lee is a former Head of Cardiff Law School and an environmental lawyer who has worked with UNEP, UNDP and the European Commission and Parliament. Prior to joining Cardiff University, Robert worked in the legal practices of two large commercial law firms. He currently works as a Professional Development Consultant with the Environment, Planning and Regulation Group of Freshfields Bruckhaus Deringer across Europe and is Specialist Advisor to the National Assembly for Wales, Environment and Sustainability Committee. He produces Environmental Law Monthly, is Environmental Editor of Journal of Business Law and co-editor of the Analysis Section of Journal of Environmental Law.

Feja Lesniewska, ClientEarth, UK

‘Participating to scale: Legal definitions of ecosystem services, participation and institutional design at the global, regional and local level’

This research paper explores the linkages between legal definitions of ecosystem services (ES), stakeholder participation and institutional design in payment for ecosystem services (PES) schemes including carbon, watersheds and biodiversity across the global, regional and local level in developed and developing countries at different spatial and temporal scales.

Legal definitions of ES are often highly contested for political, economic, cultural and environmental reasons. ES definitions can set the legal parameters, both spatial and temporal, through which the services and potential assets of different services are determined, but they can also be used to legitimise stakeholders’ claims to be included in the development and implementation of legislative mechanisms. Given the nature of ES different services provide different benefits at different temporal and spatial scales to different users. This presents numerous problems for legitimate and accountable participation of stakeholders across scales in the development of PES regulatory and institutional mechanisms. To date most PES schemes have developed in an ad hoc manner and consequently operate in a fragmented institutional legal landscape at local, regional and international levels. In 2007 the Heredia Declaration on Payment for Ecosystem Services outlined a series of mechanisms considered necessary for the successful implementation of PES at the global, regional and local level which included ‘scale matching’ and ‘participation’.

The paper will present comparative research of PES schemes, within both developed and developing countries as well as international ones. It will explore how the legal definition of an ES contributes to the framing of stakeholder participation in relation to the scale of the service delivered as well as the institutional design developed to deliver the PES scheme itself. The paper will in conclusion discuss the importance of legitimate participation across spatial and temporal ES scales in realising the Heredia Declaration’s ‘scale matching’ objectives.

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Feja Lesniewska MA, MSc, MA(Hons) is a law and policy advisor for ClientEarth (UK), an environmental law organisation. She works on the forest and climate programme specifically on forest, natural resources law and community rights in central and west Africa. Feja is also a senior teaching fellow at the School of Oriental and African Studies, London University, specialising in Natural Resources and Law, Climate Change Law and International Environmental Law. She is currently completing a PhD in International Law and Forests with a focus on China.

Professor Jim Lynch, Distinguished Professor of Life Sciences, University of Surrey; and Director of Forestry, DMCii, UK

‘Private sector initiatives in ecosystems management: Introducing the inFORM Consortium’

Professor Lynch will introduce the inFORM Consortium, whose members represent a wide range of expertise in policy development, technologies, training, market development, forestry services, social and environmental issues, financial aspects of forestry management, and effective management and leadership. The goal of inFORM is to provide a coherent, holistic and sustainable system of services that includes all the relevant components of REDD+ goals and objectives. The REDD+ intention of reducing poverty in developing countries whilst at the same time, addressing climate change issues is of great importance to inFORM.

Jim Lynch is Distinguished Professor of Life Sciences, University of Surrey; and Director of Forestry, DMCii, UK. He previously served as Chief Executive of the UK Forestry Commission Research Agency, and remains both a Distinguished Professor of Life Sciences at the University of Surrey and Board Member of the European Forestry Institute, taking the lead on Climate Change and Policy. He was awarded an OBE for his coordination of the OECD Sustainability Research Programme over 17 years and has written many books on forestry and climate change, the applications of remote sensing and scientific policy.

Professor Rosalind Malcolm, School of Law, University of Surrey

‘Valuing water’

Water is a source of life, yet as many as half the world's population may still not have decent access to safe drinking water despite the efforts of the UN to halve these numbers by 2015. Water is vital not only for life but also for industry and agriculture; it features in many aspects of tourism and recreation; and, it is a source of renewable energy. It is irreplaceable by other substances and is a finite closed resource captured within the earth's ecosystem. Yet the controls on water across the world, both in terms of its quality and its availability, are frequently ineffective in determining its effective distribution, protecting it as a resource, and preserving its quality. This paper considers the characteristics of water as a resource and its

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contradictory use as a commodity and addresses issues concerning regulatory frameworks which need to be designed and implemented to protect it from exploitation as a marketable commodity.

Rosalind Malcolm is a barrister and a Professor of Law at the School of Law, University of Surrey, UK. She is an environmental lawyer and engages in a range of research areas within that field such as regulatory frameworks for water and sanitation; regulatory approaches for ecodesign of green product development; and approaches to compliance and enforcement across the environmental arena. She also works across environmental health fields and has recently co-authored Statutory Nuisance (Malcolm, R. and Pointing, J., 2nd edition, 2011, OUP) and contributed a chapter on 'Organisations and environmental health – how environmental health is delivered' to Clay's Handbook of Environmental Health (ed, Battersby, S.) (20th ed., Spon Press, Taylor & Francis Group, 2011). Rosalind is the Director of the Environmental Regulatory Research Group in the School of Law at the University of Surrey (<http://www.surrey.ac.uk/errg/>) which is a research grouping of individuals and organisations engaged in research, teaching and consultancy into environmental regulation, compliance and enforcement. She works in multi-disciplinary research groups and is an associate member of the Centre for Environmental Strategy, University of Surrey. Rosalind also practises as a barrister from Guildford Chambers.

Kathleen Mertens, Faculty of Law, Hasselt University, Belgium

'The legal status of ecosystem services: Can they be considered as public goods?'

The studies of the economics of ecosystem services have shown that protecting ecosystems and ecosystem services is important for the protection of human well-being. Next to having an intrinsic value, ecosystem services have an economic value and consequently many parties, having a diversity of interests, are starting to show interest in the protection of these services. This can have both negative and positive consequences. One the one hand, governments may have a better basis for demanding protection of nature. On the other hand, it may entail the adverse effect of putting too much focus on the price of ecosystem services. Consequently, an even bigger negative effect is that private markets may dominate the protection of important ecosystem services. Before such effects may occur we should have a clear view on the legal status of ecosystem services. If ecosystem services can be qualified as public goods, this may have important legal consequences towards their protection from a government perspective and towards actions of private parties with regard to ecosystem services. This paper will therefore first analyse what is considered as a public good in environmental law and what the legal characteristics of public goods are. It will do so from both a national law perspective, as from an international law perspective. The paper will then apply these findings to the concept of ecosystem services. Finally, it will present some conclusions that will help to deal with future legal issues.

Kathleen Mertens is a teaching and research assistant at Hasselt University (Belgium). She is writing

a PhD on international and European biodiversity law. Her PhD research focuses on the concept of ecosystem services and how it can be used in law to protect biodiversity. Next to that, her research relates to various topics in climate and energy law. Kathleen obtained a Master degree in Dutch law at Maastricht University (2005), and a Master in Energy and Environmental Law at KULeuven (2008). Since 2009 she is a member of the editorial board of the journal Milieu-en Energierecht.

Professor Stephen Morse, Chair in Systems Analysis for Sustainability, Centre for Environmental Sustainability, University of Surrey

'Mission Impossible; Measuring ecosystem goods, ecosystem services and sustainable livelihoods'

Ecosystem goods and services (EG&S) as a concept readily maps onto the Sustainable Livelihood Approach (SLA) promoted since the late 1990s by a number of major development agencies. SLA also has its origins in economic theory, and especially the notion of multiple 'capitals', only one of which is natural capital, but it also builds upon other popular ideas in development such as participation and 'capabilities'. SLA seeks to provide both a conceptual and practical framework for understanding the livelihoods of people along with suggestions for intervention to help improve matters, and is broadly framed to cover not only the capitals and how they interact but also the institutional, policy, historical etc. matrix within which they are embedded and evolve. Indeed EG&S can be said to be just one part of this much wider picture; or in mathematical terms:

This paper will first discuss the concept of and the benefits and challenges that this brings. This will be explored using the results of a project implemented by a Catholic Church development organisation (Diocesan Development Services; DDS) in Kogi State, Nigeria, and includes a discussion of the trade-offs involved in trying to explore what are very complex social and economic systems interacting within a diverse and rapidly changing environment. DDS implemented the SLA to help provide the basis for changes planned to an existing intervention, namely micro-credit, and they decided upon a number of trade-offs to balance the significant cost of implementation against what it was looking for from the process. The first driver was a perceived need from DDS to provide quality evidence to help plan changes to its micro-credit scheme. The evidence gained from the SLA was also intended to help provide credibility when approaching major donors for support with the scheme. Secondly there was a desire to use the SLA as a means to identify and work with a group of households in an area where DDS had little prior experience on the assumption that these households could form the basis for a wider involvement with the community. Finally the paper will draw some pointers out of this process and in particular the practical viability of assessing and using

Stephen Morse has held the Chair in Systems Analysis for Sustainability, Centre for Environmental Strategy, University of Surrey, since August 2010. Prior to that Steve was a Reader and Professor in

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Sustainable Development at the University of Reading (including 3 years as the Head of the Department of Geography) and prior to that a Senior Lectures in Natural Resource Management at the University of East Anglia (Development Studies). His research and teaching are in the broad field of sustainability, and he has over 30 years of experience working as both a development practitioner and an academic. His research, consultancy and teaching interests span the measure of sustainability (notably indicators and indices), partnership and participation in sustainable development, environmental and natural resource management systems, microfinance and agricultural systems (including the role of biotechnology). He has been involved in various research projects exploring the measurement and local conceptualisations of sustainability. He has worked throughout Europe and Africa, and is an author of 16 books, including 'Sustainability: A biological perspective' (Cambridge University Press), and nearly 100 refereed journal papers. Steve is a Fellow of the Institute of Biology (Chartered Biologist), the Royal Geographical Society and the Higher Education Academy

Professor Ana Maria de Oliveira Nusdeo, Faculty of Law, University of Sao Paulo, Brasil
'Ecosystem services. Between the economic efficiency of markets and sustainability'

Ecosystem services have a local and global aspect, since it is provided by local stakeholders while its benefits are spread regionally, nationally and internationally. That poses some challenges for its regulation. How to design a regulatory model that can attract investments and also maintain the local dynamics of the localities where the services are provided? How to address equity questions related to the many stakeholders involved? In spite of such doubts, ecosystem payment programs are developing quickly and there is a good range of experiences around the world. In Brazil, for example, the debates in the country relate the challenge to create a regulatory framework that can integrate the specificity of local arrangements into a broad framework at the national level, as well as to assure the fulfillment of national aims related to conservation and sustainable development. At the international level we face a comparable challenge: the need for a broad regulation that can combine uniformity of criteria with the local specificities of the services.

The paper aims to analyze these aspects of the debate by focusing on:

a) the creation of a national regulation in Brazil as a measure for the aggregation and harmonization of local experiences; b) the convenience of an international regulation for ecosystem services markets and c) aspects which such regulations should address in order to better achieve environmental and equity aims.

Ana Maria Nusdeo is environmental law professor at the University of São Paulo Law School, since 2006. She got her law degree and PHd from the same University. She was visiting scholar at Wisconsin University Law School (1996-97 and 2008)

Professor LeRoy 'Lee' Paddock, Environmental Law Programme, The George Washington University Law School, USA

'Challenges in Implementing an Ecosystem Services Payment System'

Monetizing ecosystem services is seen as one way of better protecting or enhancing the resources that provide important services such as flood protection, storm mitigation, carbon sequestration, and water filtration. However, implementing ecosystem service programs is complicated. The paper will examine the challenges faced by the State of Maryland in the United States in establishing ecosystem service payment systems for forest cover, stream and river bank protection, nutrient removal, carbon mitigation and other services through banking, trading, and in-lieu fee systems. The paper will also reference similar efforts undertaken by the State of North Carolina.

Dean Paddock is associate dean for environmental law studies. He is a member of the ABA Section on Environment, Energy and Resources Council. Prior to coming to GW Law, he was the director of Environmental Legal Studies at Pace University Law School from 2002 to 2007. Dean Paddock has served as a senior consultant for the National Academy of Public Administration on several projects since 1999. He also was a visiting scholar at the Environmental Law Institute between 1999 and 2002, focusing on clean air act, state-federal relationship, and enforcement issues. From 1978 until 1999, Dean Paddock was an assistant attorney general with the Minnesota Attorney General's Office where he served as director of environmental policy for 13 years, as manager of the Office's Agriculture and Natural Resources Division and a member of its executive committee. He has served on numerous national panels including the Aspen Institute's Series on Environment in the 21st Century, and the American National Standard Institute's ISO 14000 Environmental Management Systems Council. Dean Paddock graduated from the University of Iowa Law School with high honors and served as a law clerk to Judge Donald Lay of the U.S. Eighth Circuit Court of Appeals.

Jerneja Penca, PhD candidate, Department of Law, European University Institute, Italy

'No choice? Contesting the narrative of regulatory choice in the international biodiversity regime'

Increased interest in market mechanisms for protection of biodiversity and ecosystem services in recent years is portrayed as an opportunity to incentivise action in the field and involve private actors in the achievement of the goal. Institutions, inter-governmental and non-governmental alike, are almost invariably sympathetic to market mechanisms. As it appears from the process of revamping the sustainable development agenda, the focus on 'green economy' is likely to further encourage the use of market mechanisms. But the economic approach is a novel, almost radical, development for the international biodiversity regime. This paper challenges the assumption that market mechanisms are an inevitable development in (international) biodiversity law. I first situate market mechanisms within the wider debate

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on regulatory choice in environmental law. I explore how and why they have, despite their many biases, spread into ever-new issue areas and jurisdictions. In the second part I challenge the common assumption that notions of 'regulation' and 'regulatory choice' fit within international law. Presupposed in this analytical framework is a set of background concepts and ideas, such as conceiving the expansion of regulatory toolbox as a progress and pursuing optimality of seemingly neutral instruments. I identify these elements and discuss the ways in which they are impeding the function of international (biodiversity) law. Rather than focusing efforts on perfecting the markets, I suggest to make an informed choice of whether and why international biodiversity law may be keen on introducing them.

Jerneja Penca is a researcher and a PhD candidate at the European University Institute (EUI) in Florence, Department of Law, where she works on new paradigms and instruments in international law for conservation of biodiversity. She holds a BA in International Relations from University of Ljubljana and LL.M degrees from University of Nottingham and EUI. Her interests lie in the field of international law and international governance, with a particular focus on environmental issues. She is a convenor of the Environmental law Working Group at the EUI and a lecturer at the Graduate School of Government and European Studies in Slovenia.

Dr Romain Pirard, Biodiversité, Institut du Développement Durable et des Relations Internationales, France

'Market-based instruments for ecosystem services: a lexicon'

Although market-based instruments (MBIs) gained prominence in discourses and practice in the field of biodiversity conservation and provision of ecosystem services, their definition and underpinning theory are yet unsettled matters. A review of MBIs – including payments for ecosystem services, taxes and subsidies, mitigation or species banking, certification, etc. – clearly shows that this label encompasses an extremely diverse array of instruments. Their only shared characteristic might be the attribution of a price to nature, yet in different ways and not necessarily in conjunction with economic valuations of the benefits / impacts associated to biodiversity and ecosystem services. Their links with markets are often loose, at least contrasted if not questionable in many cases. This pleads for a better lexicon of such a large collection of policy instruments in order to better inform policy making. This lexicon is based on the links between MBIs, economic theory, and markets. It includes six generic categories: regulatory price signals, Coasean-type agreements, reverse auctions, tradable permits, direct markets, and voluntary price signals. As a matter of illustration, "Payments for Ecosystem Services" refer to various instruments in the literature and in practice. Depending on the context they could fit in all of our categories but one, so that we wonder if the term itself is not emptied of any useful meaning at least from an operational perspective. Last, the diversity of MBIs with regard to their functioning and links with markets seems to disqualify any general statement, be it in favour or against their development. In particular, MBIs as a whole cannot be said to be

cost-efficient, risky, inequitable, or capable of revealing information to reach a social optimum and better environmental management.

***Romain Pirard** is a doctor in environmental economics who specialised on the theme of tropical forests for his thesis on the expansion of the paper industry in Indonesia and its socio-environmental impacts. He has worked at the Center for International Forestry Research (CIFOR) and as a consultant for the World Bank, as well as for French research institutions, such as CIRAD and CERDI, on tropical deforestation dynamics and the implementation of public policies presumed capable of addressing the issue. He joined IDDRI in 2008 to work on REDD + and economic instruments for the sustainable management of the environment, such as Payments for Ecosystem Services. His current research topics include market-based instruments for the environment, economic assessments applied to ecosystem services and their effective use for decision-making, and also the links between agriculture and deforestation.*

Sisira Rajapakshe, PhD candidate, School of Earth and Environment, University of Leeds, UK
'Market for improved water provision in developing countries: An application of choice experiment method'

Lack of access to quality water provision, unsustainable use and significant water-related health impacts gives considerable challenges to water resource management and hence become a central public policy issue in many developing countries. Water sector improvements generate a wide range of socio- economic benefits and hence important to estimate such benefits in order to take correct policy decisions on water allocation, efficient management and for investments in water sector improvements. A Choice Experiment applied in this study to estimate the benefits of water sector improvements under the alternative water supply policy options and each option explained by the attributes of water quality, reliability, pressure level, management organization and monthly tariff used to measure the welfare effects of water sector improvements. The empirical case study and data collection was in North Central Province, Sri Lanka, where surveying 307 households having piped borne water supply and covering more than 20 water supply projects managed by both the Central Government and the Community Based Organizations(CBO's). The results of the study found that the people are willing to pay more for the water service improvements in general and particularly for the quality attribute and this may be the reasons of poor quality of the current water service and the water related health impacts prevailing in the area. Study also found that the socio-economic characteristics and water quality parameters also play a significant role on their preferences on water service improvements. Study further revealed that the majority of them prefer to sign up to projects operated by the Central Government compare to the CBO's and this stresses the need to enhancing the technical and financial capacity of the CBO's to operate water supply projects effectively.

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Sisira Rajapakshe is a doctoral student at the Sustainability Research Institute, School of Earth and Environment, University of Leeds, UK. His research centres on developing empirical models to estimate the social benefits of water service improvements in public policy. Sisira holds a B.A degree in Environmental Management and an M.Sc in Environmental Economics. He is a lecturer in environmental management in the Rajarata University of Sri Lanka.

Professor Colin Reid, School of Law, University of Dundee, UK

'Between priceless and worthless: challenges in using market mechanisms for conserving biodiversity'

The trend away from "command-and-control" regulation to the use of a more varied range of approaches, including market mechanisms, has affected many areas of environmental law. Since the existing approach to biodiversity conservation is failing to achieve the objective of halting the decline in biodiversity, interest has grown in the potential for such approaches, including use of the market, in this field, especially at a time when financial constraints are limiting the capacity of many states to undertake major initiatives themselves. Such interest is strengthened by recent research quantifying the economic value of biodiversity and eco-system services and by the growing significance of "private" regulatory mechanisms in some conservation contexts.

Moves in this direction face challenges at both the technical and the conceptual level. Designing effective mechanisms is not easy given the significance of co-ordination, coherence and long-term measures if the needs of biodiversity are to be met, in marked contrast to the largely fungible nature of greenhouse gas emissions. Questions in relation to offsetting programmes include: how is equivalence to be judged, to what extent can harm to one species or habitat be offset by benefits for others and how is the long-term continuation of any benefits to be guaranteed? To ensure that any mechanisms work effectively, the state is likely to be required to play a significant role in regulating the market.

More fundamental questions arise as to the conceptual impact of market measures. A different set of values is engaged when biodiversity is viewed not as our common heritage outside the commercial arena but brought within it through the recognition of valuations, tradable rights and offsetting arrangements. Is such "commodification" of biodiversity a necessary development to ensure that biodiversity interests are not simply ignored in our economically-driven modern world, or a wholly unacceptable abandonment of important values?

Colin T. Reid is Professor of Environmental Law at the University of Dundee. He has written widely on environmental issues, including a book on Nature Conservation Law (3rd ed, 2009). He serves on the editorial board of several major environmental law journals and is the founding Convener of the Environmental Law Section of the Society of Legal Scholars, a founding member of the UK Environmental

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Law Association and a member of the IUCN Environmental Law Commission. He has given evidence to committees of the Scottish Parliament on several occasions. In spring 2012 he is starting an AHRC-funded project on "The Privatisation of Biodiversity? - New Approaches to Nature Conservation Law".

Professor James Salzman, Duke University Law School, USA

'Where are all the markets? The dangers of overselling ecosystem services'

From an obscure term just a decade ago, payments for ecosystem services (PES) have generated intense interest in policy, academic and business circles. Some champion the concept as allowing nature to pay its own way, others as a win-win for conservation and development. To be sure, PES offers great potential but it also has a track record that is decidedly mixed to date. This article gets behind the hype and addresses the limitations of PES. Particular attention is paid to the challenges of additionality, moral hazard, conditionality, social justice, market size and market penetration.

James Salzman holds joint appointments at Duke University as the Samuel Fox Mordecai Professor of Law at the Law School and as the Nicholas Institute Professor of Environmental Policy at the Nicholas School of the Environment. In more than six books and seventy articles and book chapters, his broad-ranging scholarship has addressed topics spanning trade and environment conflicts, drinking water, environmental protection in the service economy, wetlands mitigation banking, and the legal and institutional issues in creating markets for ecosystem services

Dr Stuart Whitten, CSIRO Ecosystem Sciences, Australia

'What really matters in market design for biodiversity offset markets'

The concept of biodiversity offsets is receiving much attention around the world with a plethora of new policies and approaches emerging. Increased attention has not coincided with consensus on offset scope or design. Instead, experience across locations including the United States, Latin America, Canada, New Zealand and Australia reveals a suite of different offset design approaches. The objective in this presentation is to set out the core elements that are necessary to underpin an environmental offset market and to illustrate some of the things that can go wrong if they are not well considered. Most offsets take place within a non-voluntary regulated environment. Offset schemes are essentially designer ecosystem markets. The potential for offsets and how these offsets take place sets up a range of opportunities for society to benefit from offset trade but also exposes society to risks of further environmental loss. We identify three key design domains that underpin an effective offset market:

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1. The measurement domain: the process for measuring biodiversity losses and gains. These gains and losses must be commensurate, potentially across time, space and other biodiversity attributes for society to avoid losing biodiversity.
2. The institutional domain: The obligation represented by the offset needs to be valuable, transferable and enforceable. An underpinning requirement is a legal process for describing the obligations and an institutional mechanism which would allow transfer of these obligations to a third party. Because the actual losses and gains are commensurate rather than identical the transfer process must formally translate obligations (based on the measurement domain) across parties.
3. The organisational domain: Understanding the likely participation (who, where, how many) in offset schemes can improve the design of cost-effective market and risk management processes and is an important step in managing the overall risk to biodiversity and society.

Stuart Whitten is an environmental and institutional economist with CSIRO Ecosystem sciences. He has worked on the design and delivery of a wide range of markets for ecosystem services. Recent projects were an evaluation and redesign of the metric of the Australian Government's Environmental Stewardship Program, pilot implementation of a conservation tender paying for outputs, and two major reports helping shape a national wildlife corridor plan for Australia. His current research focus is on understanding institutions and policy needs to support landscape scale biodiversity and on land management and Great Barrier Reef water quality. He has coordinated two major symposia: 'New Horizons in Market Based Instruments' and 'Market-based Tools for Environmental Management'; and published widely in a variety of forums.



Organisers

This workshop is hosted by the Environmental Regulatory Research Group and the Centre for Environmental Strategy at University of Surrey, and the Environmental Law Program at The George Washington University Law School.

Workshop organisers:

Dr Jonathan Chenoweth, Centre for Environmental Strategy, University of Surrey

Professor Robert L. Glicksman, Environmental Law Program, The George Washington University Law School

Dr Thoko Kaime, Environmental Regulatory Research Group, University of Surrey

Professor LeRoy Paddock, Environmental Law Program, The George Washington University Law School



Environmental Regulatory Research Group &
Centre for Environmental Strategy
University of Surrey
Guildford, Surrey, GU2 7XH, UK
www.surrey.ac.uk/errg
www.surrey.ac.uk/ces



Environmental Law Program
The George Washington University Law School
2000 H Street NW
Washington, DC 20052, USA
www.law.gwu.edu

Institute of Advanced Studies (University of Surrey)

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For more information please see www.surrey.ac.uk/law

The JB and Maurice Shapiro Environmental Conference Fund (The George Washington University Law School)

This workshop is supported in part by the J.B. and Maurice C. Shapiro Lecture Fund (The George Washington University Law School)

Outcomes

Two sets of publications are planned from this workshop:

- An edited book Regulatory and Institutional Frameworks for Markets for Ecosystem Services will be published by EarthScan ;
- A selection of articles will appear in a special edition of the journal Transnational Environmental Law



List of Participants

Dr Suvi Borgström, Department of Law, University of Eastern Finland.
suvi.borgstrom@uef.fi

Dr Jonathan Chenoweth, Centre for Environmental Strategy, University of Surrey. UK.
j.chenoweth@surrey.ac.uk

Ms Chizoba Chinweze, Chemtek Associates, Nigeria.
ud2001ng@yahoo.com

Professor Alison Clarke, School of Law, University of Surrey, UK .
a.clarke@surrey.ac.uk

Dr Kanstantsin Dzehtsiarou, School of Law, University of Surrey, UK.
k.dzehtsiarou@surrey.ac.uk

Todd Gartner, Senior Associate, Conservation' Todd Gartner, Senior Associate, Conservation Incentives & Markets People and Ecosystems Program, World Resources Institute, USA.
tgartner@wri.org

Prof Rob Glicksman, Environmental Law Programme, The George Washington University Law School, USA.
rglicksman@law.gwu.edu

Heidi R. Huber-Stearns, Graduate Student, Department of Human Dimensions of Natural Resources, Colorado State University, USA.

Miss Raphaelle Hennekine, ClientEarth, Belgium.
rhennekine@clientearth.org

Mrs Wendy Hansen, University Hasselt, Belgium.
info@wendyhansen.be

Dr Thoko Kaime, School of Law, University of Surrey, UK.
t.kaime@surrey.ac.uk

Professor Robert Lee, Co-Director, ESRC Centre for Business Relationships, Accountability, Sustainability and Society (BRASS), Cardiff University, UK.
leerg@cardiff.ac.uk

Ms Feja Lesniewska, ClientEarth, UK.
flesniewska@clientearth.org

Professor Jim Lynch, Distinguished Professor of Life Sciences, Faculty of Health and Medical Sciences, University of Surrey; and Director of Forestry, DMCii, UK.
j.lynch@surrey.ac.uk

List of Participants

Professor Rosalind Malcolm, University of Surrey, UK.

r.malcolm@surrey.ac.uk

Dr Blanca Mamutse, School of Law, University of Surrey, UK.

b.mamutse@surrey.ac.uk

Mr Luke Mason, School of Law, University of Surrey, UK.

lm0028@service.surrey.ac.uk

Ms Kathleen Mertens, Faculty of Law, Hasselt University, Belgium.

kathleen.mertens@uhasselt.be

Professor Ana Maria de Oliveira Nusdeo, Faculty of Law, University of Sao Paulo, Brasil.

ananusdeo@usp.br

Professor Stephen Morse, Chair in Systems Analysis for Sustainability, Centre for Environmental Sustainability, University of Surrey, UK.

s.morse@surrey.ac.uk

Professor LeRoy 'Lee' Paddock, Environmental Law Programme, The George Washington University Law School, USA.

lpaddock@law.gwu

Ms Jerneja Penca, PhD candidate, Department of Law, European University Institute, Italy.

jerneja.penca@eui.eu

Dr Romain Pirard, Biodiversité, Institut du Développement Durable et des Relations Internationales, France.

tiffany.chevreuil@iddri.org

Mr Sisira Rajapakshe, PhD candidate, School of Earth and Environment, University of Leeds, UK.

eempsk@leeds.ac.uk

Professor Colin Reid, School of Law, University of Dundee, UK.

c.t.reid@dundee.ac.uk

Professor James Salzman, Duke University Law School, USA.

salzman@law.duke.edu

Dr Stuart Whitten CSIRO Ecosystem Sciences, Australia.

stuart.whitten@csiro.au

Miss Susannah Wilks, ClientEarth, Belgium.

swilks@clientearth.org

Notes

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Faculty of Business, Economics and Law

University of Surrey

Guildford, Surrey GU2 7XH UK

www.surrey.ac.uk

